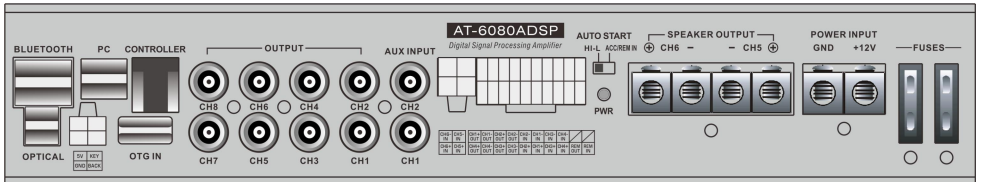


# User Manual

# audiotec



## AT-6080ADSP

### SPECIAL DSP AMPLIFIER

Please read this manual carefully before using this product and keep it for future reference

**Warning:** To prevent unit be short circuit, please do not put it in the wet or damping places.

If unit catch water and any liquid that please turn off power immediately and do not open cover by yourself. Please contact with professional engineer for checking to avoid accident happen.



## Packing List

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For every package including below items, Please noticed retailer and Factory if shortage:

AT-6080ADSP unit	1PC
User Manual	1PC
Warranty Card	1PC
USB computer tuning cable	1PC
Universal cable	1 set
Head Unit Cable	1PC
Remote Controller	1PC

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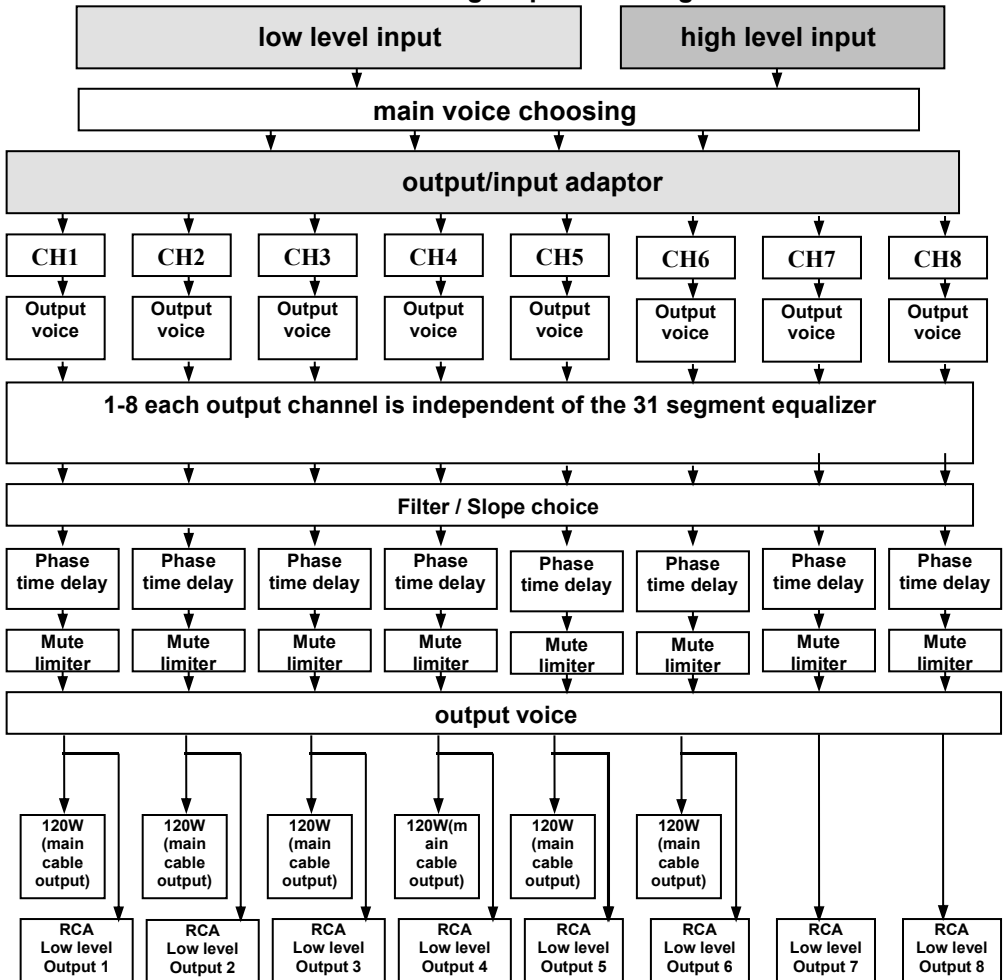
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# 1. Feature

## 1.1 Audio specification, main audio signal process diagram

This equipment adopts the audio extraction method with high sampling rate of 48KHz. The core processor is the digital signal processor (DSP) with high resolution 64 bit double precision floating point and 31 parametric equalizer or graphic equalizer, delay and frequency device (low shear and high cut filter, the types of specialized division include: Ning g / Bessel / Butterworth, CH1-CH8 nine slope 6dB and 12dB /18dB/ 24dB/30dB /36db/ 42dB/ 48dB/off optional) etc..

**Main audio signal process diagram**



1.2 Input and output side panel

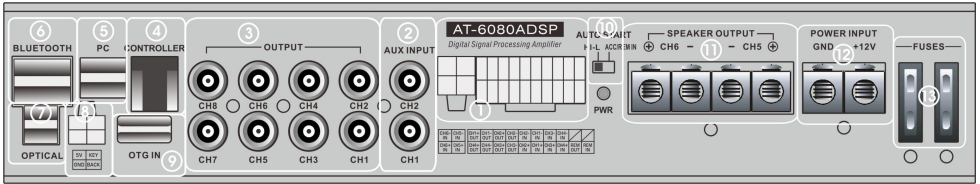


Figure 1.2.1

- 1.) Head unit connecting port
- 2.) Low level RCA input
- 3.) Low level RCA Output
- 4.) Remote Control
- 5.) USB2.0 port
- 6.) Bluetooth connection Port
- 7.) Optical connection port
- 8.) Multi function steering wheel
- 9.) OTG input
- 10.) ACC /Hi-L or REM IN convertor
- 11.) Speaker output
- 12.) Power Input
- 13.) Fuse

1.3 Software Introduction

AT-6080ADSP PC software control: (please check 3. Software Operation detail )

- 1) Automatically detect whatever the hardware is connecting with USB cable, if ready and will connect with head unit automatically.
- 2) Display resolution over than 1280\*760, or else cannot show fully.
- 3) Only for windows system's computers.

1.4 Function Introduction

Specification

Active Range	≥110dB
S/N Ratio	≥100dB
T.H.D.	≤0.05%
Freq. Response	20Hz ~ 20KHz
Input Impedance	Low level input:20KΩ, High level input:240Ω
Low level output impedance	100Ω
Power Output	120W X 6
Signal input/output range	RCA Input: 6Vpp; High level: 26Vpp; RCA Output: 9Vpp; Amplifier: 26Vpp
Temperature	-20 ~ 70°C
Supply Voltage	DC 12V ~ 14.4V
Sample rate	48KHz/24Bit
Turn-on REM output	+12 V starting voltage output(0.2A)
Power consumption	≤0.1W

Function

Input signal type	Choice: 4ch high level, 2ch low level, Bluetooth, Optical, Player, OTG In
RCA output location	Freely definable output sound position and speaker type
Output signal gain	Gain range: Mute, off to 60.0dB
Output signal equalizer	1-8 Each output channel 31 band equalizer engine: 1、 Equalizer type: 1st equalizer for Q and low pass option. 2nd equalizer for Q and high pass option others for Q balance 2、 Frequency range: 20Hz ~ 20KHz, resolution 1Hz. 3、 Q (slope or gradient): 0.429 ~ 16.052 4、 Gain: -20.0dB ~ +20.0dB, resolution 0.1dB
Output signal crossover	Each output with 2 rank's high/low pass independent filter 1. Professional filter type: Butterworth, Linkwitz-Riley, Bessel 2. Filter crossover: 20Hz - 20KHz, Resolution 1Hz 3. Filter slope setting: 6/12/18/24/30/36/42/48dB/Off/Oct.
Output phase and time delay	Each output channel can be adjusted for phase and time delay, parameter range Phase: 0 °/180 ° Time delay: 0.000-20.0ms, 0.00-692cm, 0.00-272inch
Scene operations	Unit can keep 6-style of music scenes by preset.

### 2.1 System classic connecting reference

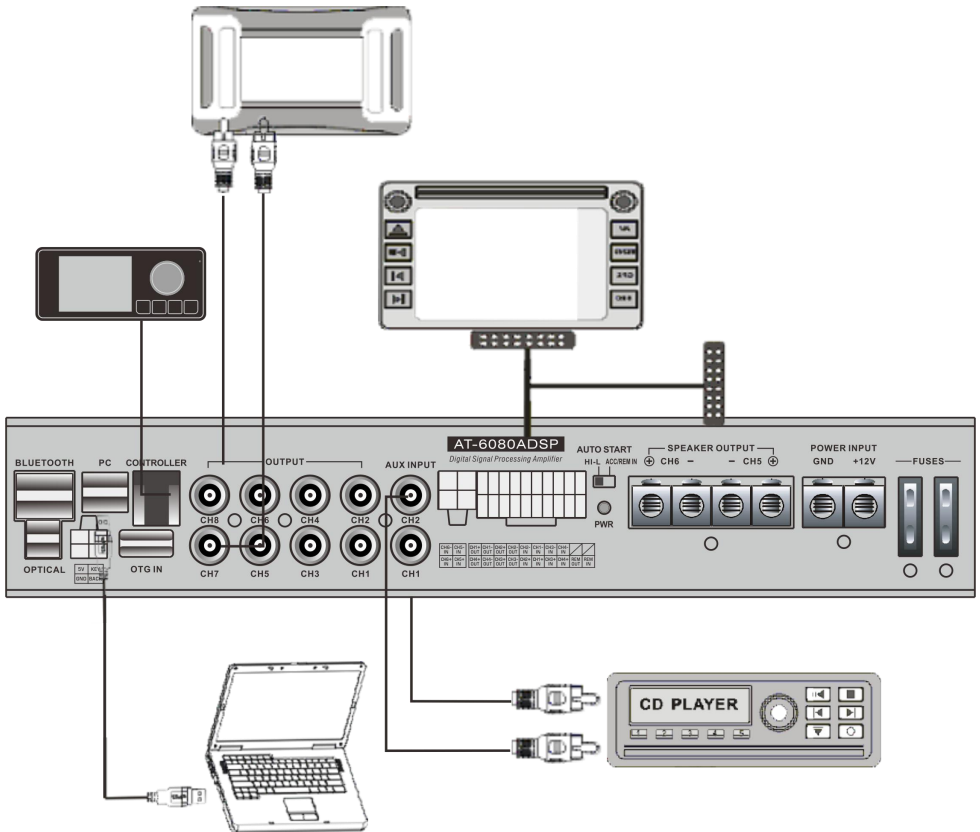


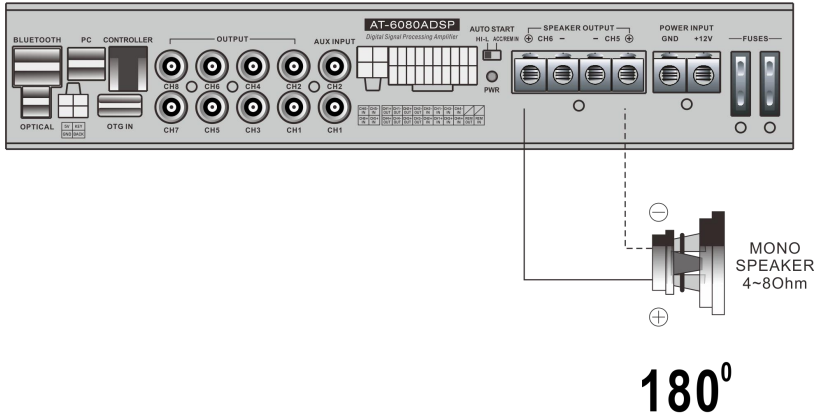
Figure 2.1

this connecting method is for two units input, please refer below:

1. Please use Plug & Play cable to connect original car unit and AT-6080ADSP for upgrade audio system effects. Please use OUT7 and OUT8 RCA output when Install bass amplifier or subwoofer
2. with the player, using RCA low level input connection, mobile phone use standard AUX special line.

### 2.1.1 Speaker connecting reference

## SPEAKERS BRIDGED MODE



**Note: when CH5/CH6 bridging, corresponding computer software ,the CH5 hyper bass is to choose " 180° " !**

2.2 Unit connection

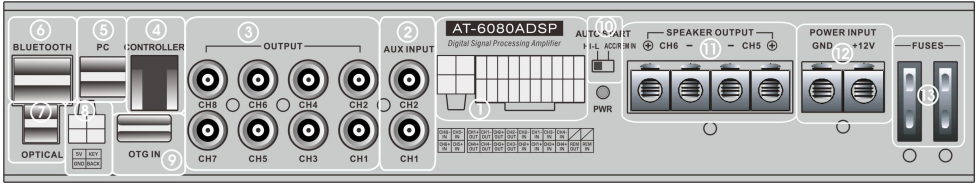


Figure 2.2

indication "1" is the plug connecting position and assort with connecting cable which is matching unit.(figure 2.2) Connecting wire specifically defined in the following table:

CH6- IN	CH5- IN	CH1+ OUT	CH1- OUT	CH2+ OUT	CH2- OUT	CH2- IN	CH1- IN	CH3- IN	CH4- IN	/	/
CH6+ IN	CH5+ IN	CH4+ OUT	CH4- OUT	CH3+ OUT	CH3- OUT	CH2+ IN	CH1+ IN	CH3+ IN	CH4+ IN	REM OUT	REM IN

Direction:

1. only for the original Plug & Play cables, or user using others directly.
2. REM input, when the toggle switch to ACC, only ACC input; When the toggle switch is switched to HOST, the two high level input lines of FL+/FL- are defined. When there is original car or other high level input, the machine will detect the audio signal to start the machine.

**Note: when do not use high level input (only RCA low level input), the toggle switch dial in DC, defined in FL+/FR+/RR+/RL+ arbitrary a all can access REM or ACC input, can be normal to start the machine.**

2.3 Low level RCA input/output indication

"2" "3" position where is "low level RCA input/output" (figure1.2.1)

1. Low level RCA inputs, usually followed by an external player RCA output as the auxiliary input, maximum input level is 10VPP.
2. the low level RCA output, CH1 to CH8 signal with the original car interface is the same, but there is without power amplifier, while the default output type of CH7 and CH8 is ultra-low left and ultra-low right, usually external bass amplifier, as bass strengthened. Of course, users can configure their own initiative RCA low level output to complete more high-end divided by two or three-way system.

### 2.4 USB2.0 Port

As shown in figure 1.2.1, the "5" indicator bit is the "USB2.0" position.

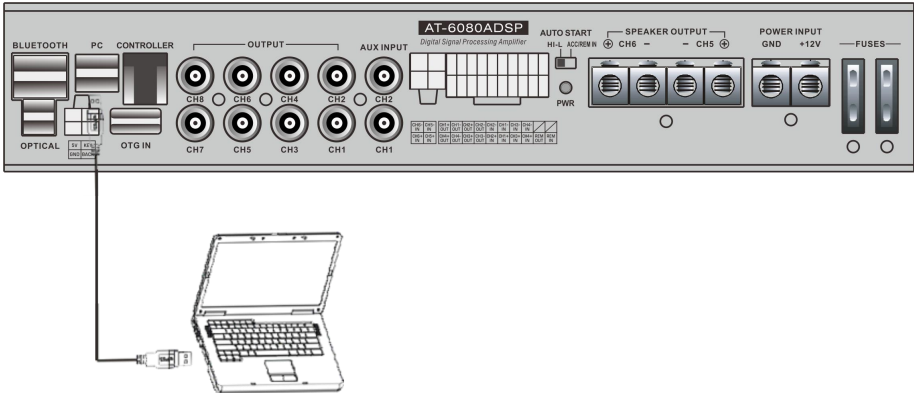


Figure 2.3

Use Random accessories USB cable into this hole on a computer connected to the PC, open tuning software to debug the sound system.

### 2.5 The remote control function is introduced

The central control can control the host, including playback mode, sound effect call, delay calibration, frequency divider, channel volume, mixing, screen light, square control setting, EQ, delay, phase, volume, song selection, fast back, fast forward and almost all other functions.

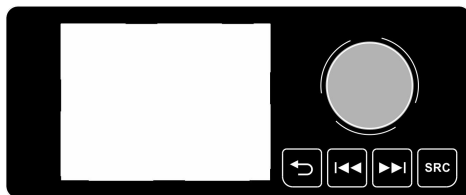


Figure 2.4

1. Outlet: ergonomic design of central control, which can be installed in three-way outlet.
2. Screen: 2.8-inch true color HD LCD screen
3. The knob button has the following functions:
  - (1) Counterclockwise rotation: A. volume decrease B, reverse selection
  - (2) Clockwise rotation: A, increase the volume, B, positive selection
  - (3) Short press: A, pause / player B, confirm
  - (4) Long press: enter the advanced setting menu
4. Key: "⏮"
  - A. Short press: previous song
  - B. Long press: play rewind
5. Key: "⏭"
  - A. Short press: next song
  - B. Long press: play fast forward
6. key: "↶" return to the previous file or menu.
7. Key: "SRC " open file

## 3.1 Software Installation

PC tuning software is no need to install drive program, plug and play.

Operating environment: Suitable for Windows XP / Vista / WIN7 / WIN8 / WIN10 operating system.

The installation procedure describes:

After you install the software and downloading, double-click the installation file, step down can be achieved by tuning the software is installed.

## 3.2 Turn on and turn off

Double-click the AT-6080ADSP icon to open the software, and the main interface before online is shown in figure 3.2.1 : (the upper right corner refers to the unconnected state)

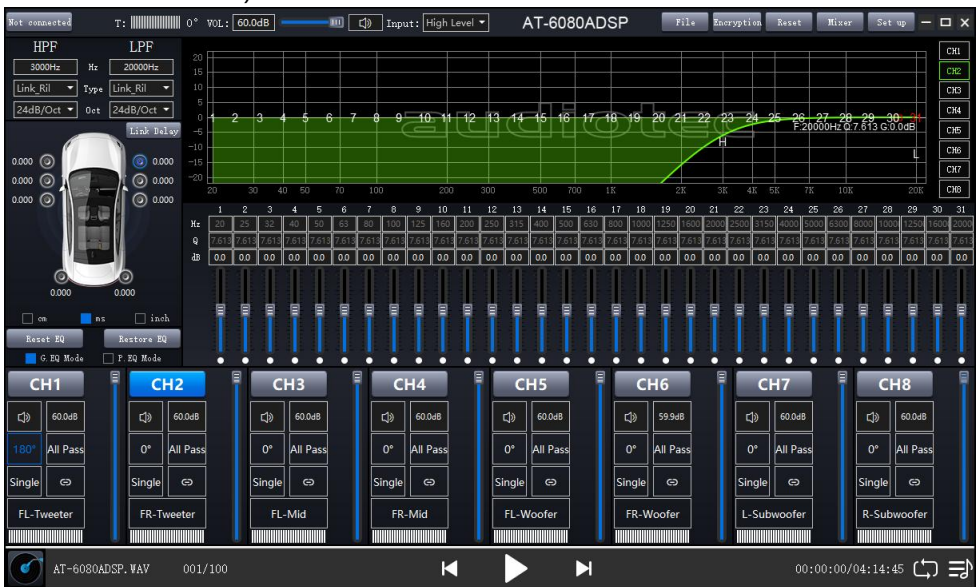


Figure 3.2.1

AT-6080ADSP provides only wired USB PC software connection. Wired USB connection:

Ensure that AT-6080ADSP power state, with a USB cable to connect to a computer through the USB interface, the computer will find the new device and automatically install the update equipment, after a few seconds the installation is complete. Mixer software will automatically line up with the hardware. Right corner refers to "connected" state.

## 3.3 Software interface

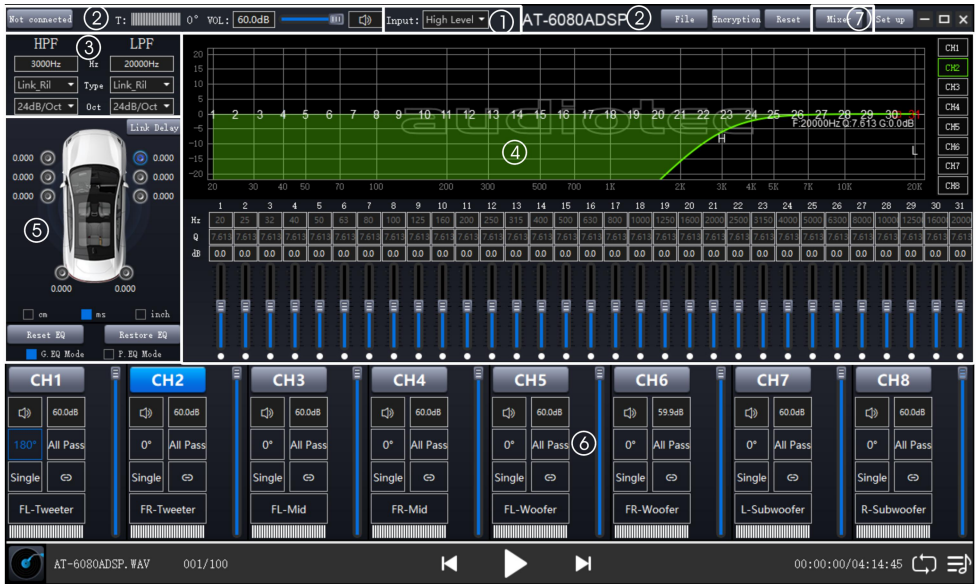


Figure 3.2.2

Software interface AT-6080ADSP unit divided into the following functional:

1. as shown in figure 3.2.2, "1", input signal selection: high level, low level, Bluetooth, Optical, Player, OTG In.
2. as shown in figure 3.2.2 "2", shows the main menu and connection status.
3. as shown in figure 3.2.2 "3", the high-pass and low-pass Settings of the divider.
4. as shown in figure 3.2.2, "4", area is output channel EQ setting.
5. as shown in figure 3.2.2, "5", shows the setting of delay space.
6. as shown in figure 3.2.2, "6", output channel configuration and common parameter adjustment area.
7. as shown in figure 3.2.2, "7", shows the setting of Mixer space.

### 3.3.1 Input signal select

In the online mode, in Figure 3.2.2 "1", click the appropriate input source, you can switch the audio input signal.

8. Optional: high level, low level, Bluetooth, Optical, Player, OTG In. The default audio source can be selected in the option of "2" zone. The default power source is high level. Users can choose AUX and player as the default power source.

The volume can be directly pushed left and right, or input volume value, scroll the mouse wheel, etc. Adjustable range: 0-60(0.5dB/Step)

## 3.3.2 Output channel switch and operations

"6" area, click on the corresponding channel number in Figure 3.2.2 (CH1, CH2 ..... CH8), you can switch to the corresponding channel to adjust relevant parameters when changing the channel editing, where there are only 3.2. 2 "3" zone (crossover and equalization parameters) will vary depending on the channel and change the parameter values.

## 3.3.3 Output volume, delay, type, mute and phase setting

In Figure 3.3.1, there are six output channels commonly used parameters are displayed, the user can quickly adjust the parameters directly here. Of course, users can also customize the horn type of each output channel. Specifically adjusted as follows:



Figure 3.3.1

1. the output volume control, volume control for each channel independently and the master volume, pushing the volume fader below each channel label can be in OFF (off), - adjust between 60dB to 6dB; while on the right also has a total volume of all output is adjustable, adjustment range is OFF (off), - between -39dB to 6dB.
2. mute and phase adjustment, also under the label of each channel are phase and mute both buttons select, and click on the button you can be between "positive phase" and "inverted" Switch, click the mute button You can switch between "open tone" and "off the sound." Figure 3.3.2 as follows:



Figure 3.3.2

3. Select delay units, which are in milliseconds, centimetres, and inches. The range of milliseconds: 0.000~20; Range of mm: 0~692; Range of inches: 0 to 272;
4. AT-6080ADSP processor output signal path can be any type of on figuration freedom to any sound field point and the speaker type. The system defaults to 4.1 full-range passive mode. Figure 3.3.3 as follows ;



Figure 3.3.3

- CH1: front left tweeter output
- CH2: front right tweeter output
- CH3: front left mid range output
- CH4: front right mid range output
- CH5: front left woofer output
- CH6: front right woofer output
- CH7: left subwoofer
- CH8: Right subwoofer

Users can be customize the speaker type for each output channel, the specific methods of operation.

**The first step:** Click on the right side of the "Reset " button in the dialog box, select the "Clear" button, return to the main interface, all channels are reset to "empty" (no connection to any speaker , there is no output of), as shown below 3.3.4:

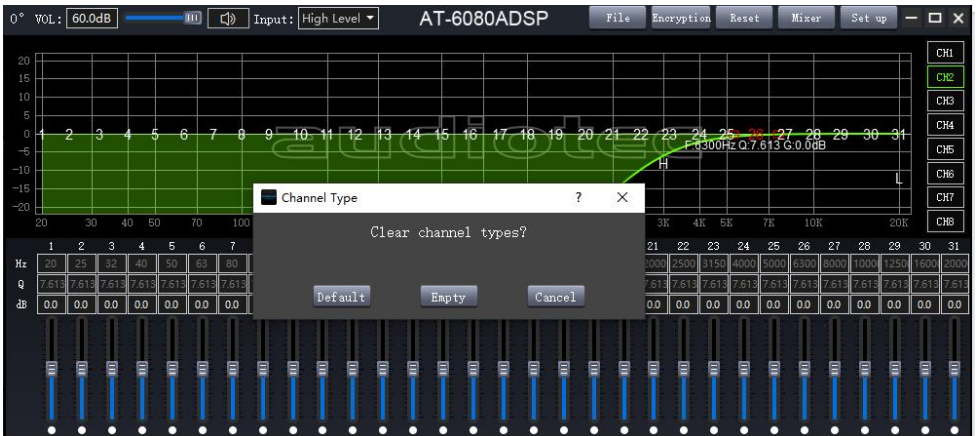


Figure 3.3.4

**The second step,** the channel number beneath each, click on the type drop-down menu box, select the option in the pop-up users locate the type of speaker. Figure 3.3.5 as follows:

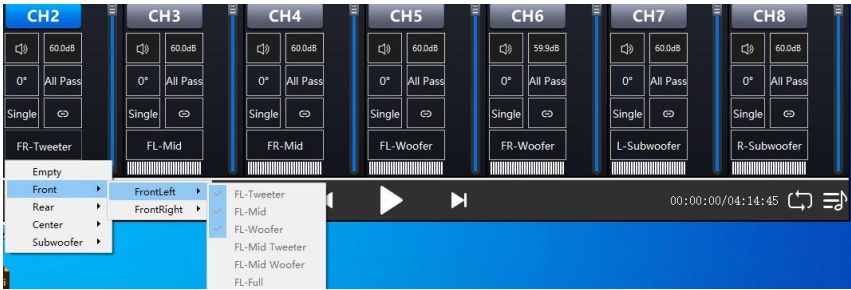


Figure 3.3.5

The system will be based on the user has selected the type of output signal path, the shielding portion of the signal path type option (as a shadow, the user is not optional). Specific options are:

- Front » left, right » high/ mid/ low/ mid-high/ mid-low/ and full frequency
- Rear » left, right » high/ low/ and full frequency
- Center » high-frequency, low frequency and full frequency
- Super low » left super low, right super-low and super-low

**The third step**, after the user has configured all of the output signal path, click on the right side of Figure 3.3.4 "Lock Output Configuration" to lock the configured output channel speaker sound field position. So that users and then in the bottom of each channel label, click on the type of drop-down menu box, type options will not pop up.

5. the output delay adjustment, is set in the delay space area to the left of the illustrated adjustment, as follows (Figure 3.3.6), click on the value of the input box next to the corresponding speaker can be entered after the delay value corresponding units.



Figure 3.3.6

## 3.3.4 Output signal equalizer and crossover operation

Output channel equalizer and crossover editor mainly in the following areas of regulation, as shown in 3.3.7:

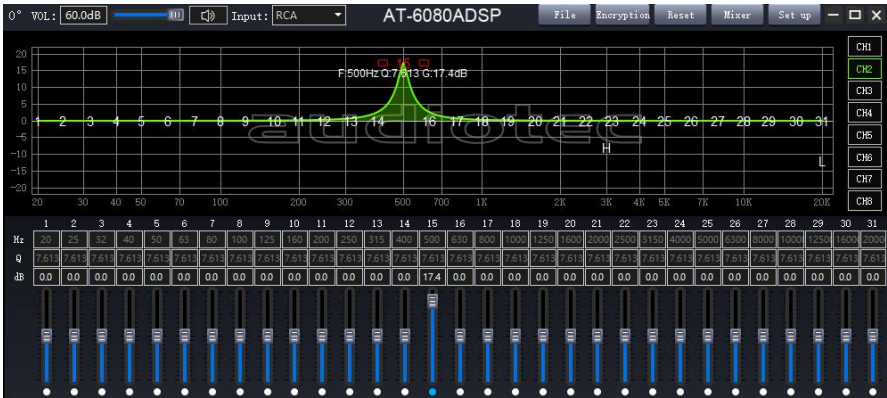


Figure 3.3.7

Gain, drag around to adjust the equalizer frequency points; when the mouse is moved to the left and right of the small red box, press and drag left and right to adjust the equalizer Q. All parameters are displayed simultaneously adjust the current real-time equalizer is also updated value EQ parameters editing area.

1. the output channel EQ editing method, all 31 equalizer will work for the next parametric equalizer. When the parametric equalizer curve, if available in the box below the corresponding input parameter values can be (frequency, Q value, and gain) adjusted in real time will also be revealed at the top (as shown in Figure 3.3.8 parametric equalizer case ).

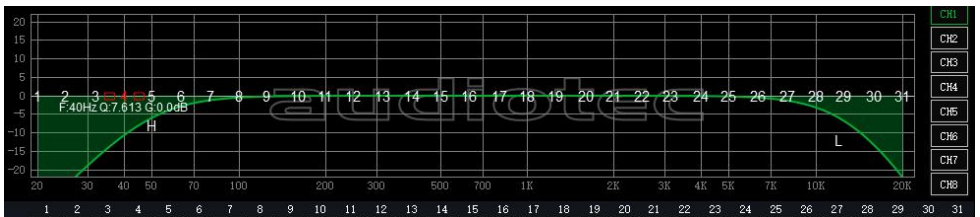


Figure 3.3.8

**Straight balanced:** the button shown in Figure 3.3.4, the current channel as long as there is an equalizer in the open state, this button will appear highlighted in green state, indicating that you can click this button to make all the equalizer .

current channel change to not start moving (directly). Click the button that will return to "restore the balance." Then click on "restore the balance" button will allow all current equalizer channel back to the last activated state.

**Note: This operation will change the equalizer gain.**

**Reset balanced:** the button shown in Figure 3.3.4, click this button to make all current channel equalizer parameters return to the initial state: uniform distribution of frequency, Q value is 1.2, a gain of 0dB.

2. the output channel divider editing method

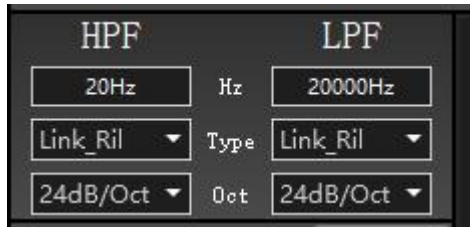


Figure 3.3.9

In the column of "frequency divider" in figure 3.3.9, the parameter value of the device frequency divider.

Type setting: drop-down menu to select the way, there are (Linkwitz-Riley), (Bessel) and (Butterworth) and other three options.

Frequency setting: via direct input value, scroll the mouse wheel up and down keys on the keyboard and other ways to adjust low-cut or high-cut frequency. Adjustment range: 20Hz ~ 20KHz.

Slope(slope)settings:6dB/Oct,12dB/Oct,18dB/Oct,24dB/Oct,30dB/Oct,36dB/Oct, 42dB/Oct, 48dB/Off/Oct and other 9 options.

#### 3.3.5 Output signal equalizer and crossover operation



figure 3.3.10

#### Reset EQ button:

It is used to restore the parameters of the 31-band equalizer to the original pass-through mode (the frequency of the equalizer, the Q value and the gain are restored to the initial value).

### Restore All Equalizations button:

pass-through mode (the gain of all equalization points is restored to 0 dB, the frequency and value are unchanged).

### Link output Configure button:

Click this button, a pop-up dialog box, select the synchronous mode (option to "copy from left to right" or "Copy from right to left" radio button), press "OK" to confirm; when you click this button again FBI releasing left and right channels function. (Note: the left or right channel by the FBI, the software will automatically lock output channels, output of the equalizer, divider and output volume data may FBI mute, phase, space and delay are not the FBI. ) in the locked FBI, the item associated tone has an FBI logo be displayed.

**Mixer settings:** click "mixer" in the "7" area in Figure 3.2.2, then you can switch to (Figure3.3.14) the relevant parameter settings for the corresponding adjustment.

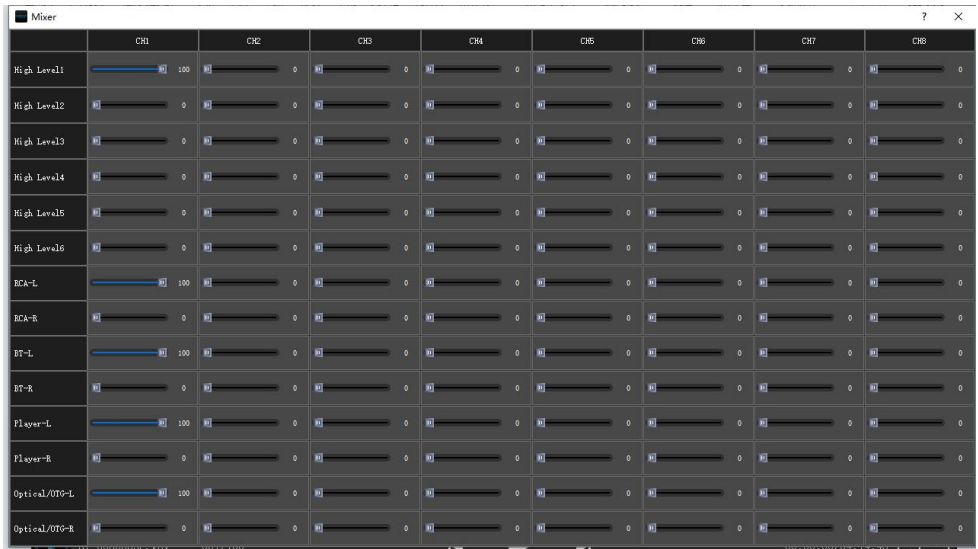


figure 3.3.14

### 3.4 Setting introduce



Figure 3.4.1

As shown in Figure 3.4.1 AT-6080ADSP software of the scene in three major types of actions: the machine stored scene data, computer data stored scene and the whole scene data manipulation.

1. the machine data stored scene operation: refers to the scene data is now running the machine and set aside six in one scene between the data stored load, save, and delete operations

*(Note: the choice of input signal sources, the output signal and the output channel type configuration for the machine stored total volume not save scene data load operation)*

2. the computer stored scene data operation: the machine is now running in the scene data is saved as a computer file, or to load a previously saved scene computer files to the machine running.

*(Note: the choice of input signal sources, the output signal and the output channel type configuration for the computer stored a total volume not save scene data load operation).*

3. the whole scene data: is to copy all the data in the machine to machine, or save all of the data on existing machines as computer files, of course, including all of the input and output configuration data and advanced options data. This is mainly used for data storage and copy machine.

#### 3.4.1 Original setting change

##### 1. save for the machine preset

This function is to save existing work scene preset scene for the machine data (total of 6).

**Step1:** Click on the main interface to the top menu " File " button will pop up all the scenes action item (see Figure 3.4.1).

**Step2:** Click "Save " item will pop up after the Save As dialog window machine preset (Figure 3.4.2).



Figure 3.4.2

**Step 3:** Figure 3.4.2 dialog box, does not show the name of the data indicates that this scene is the factory default data, select the user preset number you want to save the machine location (such as Source 4), and then point below the "save "button, you pop up as shown in Figure 3.4.2," enter the scene name "box.

**If you select the number of the existing scene name, it will overwrite the original data !!**

#### 2.loading machine preset scenarios

This feature is to preset scene previously saved machine data (saved as a machine preset) out of tune as the machine is currently running scene.

**step1:** Click on the main interface to the top menu " File " button will pop up all the scenes action item (see Figure 3.4.1).

**Step2:** Click "load " item will pop up after loading machine preset scene window dialog box (Figure 3.4.4).



Figure 3.4.4

**Step3:** as dialog box of figure 3.4.4 , select the machine where the user wants to load a preset number (as selected on the 3rd), and then point below the "import" button on the pop-up shown 3.4.5 loading data transfer progress shown in the wait window.

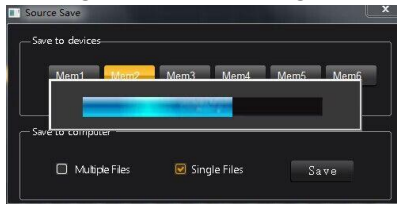


Figure 3.4.5

#### 3.4.2 Load and Save to store scene files on your computer

##### 1. save as a scene file on the computer

This function is to save the current machine working scene data to a computer in order to prepare the late call.

**Step 1:** Click on the main interface to the top menu " File " button will pop up all the scenes action item (see Figure 3.4.1).

**Step 2:** Click "single File " will bring up the file after item Save As dialog window (Figure 3.4.6).

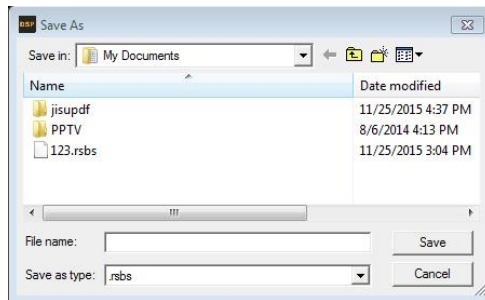


Figure 3.4.6

**Step 3:** Enter the file name in the pop-up window you want, save point on it.

##### 2.loading scene files on your computer

This function is previously stored in the scene file on the computer the machine work load for the current scene

**Step1:** Click on the main interface to the top menu "File" button will pop up all the scenes action item (see Figure 3.4.1)

**Step2:** Click "computer import" after entry window will pop open file dialog box (Figure 3.4.7).

**step 3:** open the pop-up window, select the file name of the user you want to call, point to open it.

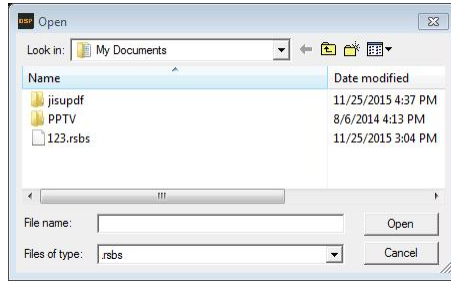


Figure 3.4.7

### 3.4.3 Load and save the whole store a scene

1, save the whole store the scene

This function is to save all the data on the machine is now on-line for a computer file data (data file of the whole machine, including the current job scenario, six groups of all machine data preset scene, output channel configuration data and advanced data and other options), to when copying machine call late the whole device. This action does not change any data now on-line machine Specific methods of operation and the "Save the scene file on the computer is" basically the same, please refer to the operation on their own.

2, load the whole scene

This function is to load previously saved on the computer the whole machine to machine data files (data file of the whole machine, including the current job scenario, six groups of preset machine all the scenes, the output channel configuration data scenario, six groups of preset machine all the scenes, the output channel configuration data and advanced data and other options data). That is, the previous overall good debugging machine data copied to now coupled machines.

**We recommend similar models when making audio system, for the whole replication functions.**

The specific operation method is basically the same as "loading the scene file on the computer", please refer to the operation by yourself.

### 3.5 Options Introduction

Noise/Source Volume/Boot default source/About.After click on the main interface to the top menu "Setup" button in Figure 3.5. it will pop up "Setup" of each menu

item, You can choose : Firmware update /

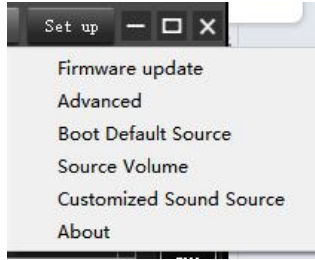


Figure 3.5

#### 3.5.1 Firmware update Setting

In the options menu, click the " Firmware update " option with the mouse, and a message dialog box will pop up, in which you can set the password for encryption. shown in Figure 3.5.1.

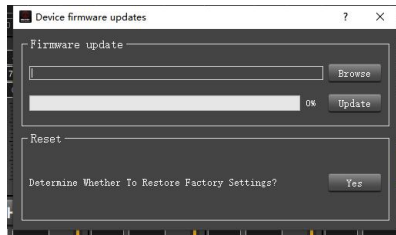


Figure 3.5.1

#### 3.5.2 Advanced Setting

In the options menu, click the " advanced " option with the mouse, you will can set the auxliary sound source/main SRC attenuation ratio/Hoisegate start threshold/high fidelity ,shown in Figure 3.5.2

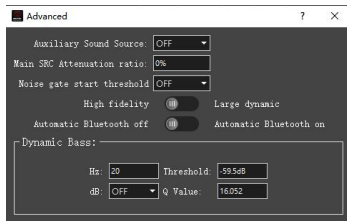


Figure 3.5.2

#### 3.5.3 Source Volume Setting

In the options menu, click the "Source Volume" option with the mouse, and a message dialog box will pop up, in which you can set the volume for Hi-Level/

Low Level/Bluetooth/player/Optical/OTG In, shown in Figure 3.5.3

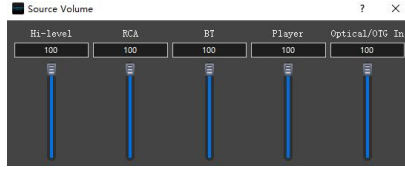


Figure 3.5.3

#### 3.5.4 Boot Default Source Selection

In the Options menu, click on "Boot Default Source", It can select the sound source.

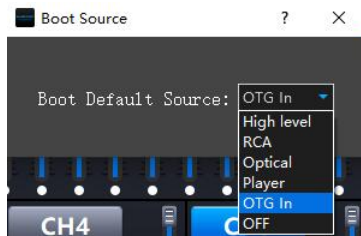


Figure 3.5.4

#### 3.5.5 Information about the inquiry

In the Options menu, use the mouse to click on the "About" option the system will pop up a message Query dialog box, in which you can query to: SEQ ID letter version information of the device, the software version information and device information.

#### 3.5.6 Encryption Setting

In the options menu, click the "Encryption" option with the mouse, and a message dialog box will pop up, in which you can set the password for encryption. shown in Figure 3.5.6. Password:123456

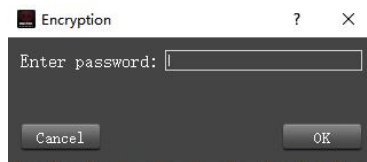


Figure 3.5.6

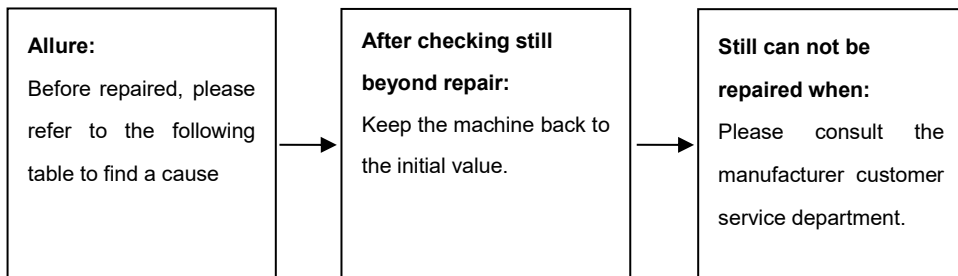
#### 3.5.7 Player Control

At the top of the interface, click the Press to switch, select previous / next song/pause playing.



Figure 3.5.7

Before applying power, carefully check the cable is normal, we must ensure that all interfaces as a normal connection. Common Fault diagnosis and treatment



### Troubleshooting methods:

No.	Symptom	Reason and solutions
1	No electricity	1. pls check if power linking correct? 2. pls check if REM IN if linking correct?
2	No voice	1. pls check if turn on mute style 2. pls check if input channel is correct?
3	cannot link USB	1. pls check if USB cable is setting correct 2. pls cekck if find name as "HID-compiling device" in the computer

